

Roll No. _____

3547

**B. Tech. 7th Semester (ECE)
Examination – February, 2022**

FIBER OPTICAL COMMUNICATION

Paper: PCC-ECT-401-G

Time: Three Hours]

[Maximum Marks: 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question Number 1 is compulsory. All questions carry equal marks.

1. Write short notes on the following: 2.5 × 5 = 15
- (a) Bend Loss
 - (b) Optical Fiber
 - (c) Detector

3547-22 (P-3)(Q-9)(22)

P. T. O.

- (d) LASER
- (e) Kerr effect
- (f) WDM

UNIT - I

- 2. (a) Explain Ray theory of optical propagation. 8
- (b) Describe dispersion effect in optical communication. 7
- 3. Explain various types of losses in optical communication. 15

UNIT - II

- 4. (a) Explain how the light will be generated in optical source. 8
- (b) Explain the characteristics of LED. 7
- 5. (a) Compare LED and LASER in detail. 8
- (b) Explain the working principle of Detectors. 7

UNIT - III

- 6. (a) Explain the working of optical amplifier. 8
- (b) Describe the concept of WDM in detail. 7

3547. -P-3)(Q-9)(Z2) (2)

7. Describe link budgeting, link design and path loss calculations. 15

UNIT - IV

- 8. (a) Explain the concept of Kerr effect. 8
- (b) Explain self phase modulation in detail. 7
- 9. Describe various linear and non-linear effects in optical communication. 15

3547. -P-3)(Q-9)(Z2) (3)